

# EXHIBIT 15

**\*\* H I G H L Y C O N F I D E N T I A L \*\***

**UNITED STATES DISTRICT COURT**

**SOUTHERN DISTRICT OF NEW YORK**

**Case No. 1:13-cv-07789-LGS**

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**IN RE FOREIGN EXCHANGE BENCHMARK RATES**

**ANTITRUST LITIGATION**

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**September 27, 2018**

**9:50 a.m.**

**Videotaped Deposition of HAL J.  
SINGER, Ph.D., taken by Plaintiffs,  
pursuant to Notice, held at the offices of  
Cahill Gordon & Reindel LLP, 80 Pine  
Street, before Todd DeSimone, a Registered  
Professional Reporter and Notary Public of  
the State of New York.**

<p style="text-align: right;">Page 122</p> <p>1 SINGER - HIGHLY CONFIDENTIAL</p> <p>2 other, but I don't think you could run</p> <p>3 both.</p> <p>4 Q. Coming back to the three firm,</p> <p>5 four firm, five firm analysis that you</p> <p>6 mentioned a minute ago, does that analysis</p> <p>7 involve quantifying in some way thresholds</p> <p>8 over which a market would be considered</p> <p>9 unconcentrated, moderately concentrated or</p> <p>10 highly concentrated?</p> <p>11 A. I think I have seen thresholds</p> <p>12 provided, but if you are asking could one</p> <p>13 calculate the three, four and five firm</p> <p>14 concentration metric, of course you could.</p> <p>15 Q. And on the question of</p> <p>16 thresholds in particular, you believe</p> <p>17 that's something that exists in the</p> <p>18 literature?</p> <p>19 A. Yes.</p> <p>20 Q. Anything in mind? Any papers</p> <p>21 in mind that deal with that?</p> <p>22 A. I seem to recall an older</p> <p>23 version of the guidelines including various</p> <p>24 metrics in that dimension, and potentially</p> <p>25 this version of the guidelines. I'm not</p>	<p style="text-align: right;">Page 124</p> <p>1 SINGER - HIGHLY CONFIDENTIAL</p> <p>2 complicated.</p> <p>3 And, similarly, on HHI, you</p> <p>4 asked me if I have done it. I think I or</p> <p>5 my staff have done it, but it is not</p> <p>6 reported in this report.</p> <p>7 Q. Understood.</p> <p>8 We talked a little bit earlier,</p> <p>9 I'm switching gears here, about</p> <p>10 non-defendant liquidity providers.</p> <p>11 Now I'm at paragraph 27 of your</p> <p>12 report. I will ask you a few questions</p> <p>13 around that. So maybe it would be worth</p> <p>14 taking the time to read through that.</p> <p>15 (Witness perusing document.)</p> <p>16 A. Okay, I have read 27.</p> <p>17 Q. So the first sentence says "In</p> <p>18 the FX market, Class Members are price</p> <p>19 takers and Defendants are price makers</p> <p>20 (also referred to as market makers,</p> <p>21 liquidity providers, or dealer banks)."</p> <p>22 Fair to say that that's a</p> <p>23 general statement that might have some</p> <p>24 exceptions?</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 123</p> <p>1 SINGER - HIGHLY CONFIDENTIAL</p> <p>2 capable of searching it in my current</p> <p>3 state.</p> <p>4 Q. But at this point in your</p> <p>5 report you don't report results of a</p> <p>6 concentration analysis on either the HHI or</p> <p>7 the three firm, four firm, five firm</p> <p>8 analysis that you described just a minute</p> <p>9 ago; is that right?</p> <p>10 A. I think what I hear you asking</p> <p>11 is have I presented results on either the</p> <p>12 three, four, or five firm concentration</p> <p>13 measures by currency pair.</p> <p>14 The answer is no. I have given</p> <p>15 you one example for the most important</p> <p>16 currency pair for the five firm. But I</p> <p>17 haven't provided you the three, four and</p> <p>18 five of every currency pair, but I'm</p> <p>19 testifying that it is feasible if you are</p> <p>20 so interested to compute any or all of them</p> <p>21 yourself.</p> <p>22 On the question of --</p> <p>23 Q. So that assumes facts, but go</p> <p>24 ahead.</p> <p>25 A. This is really not that</p>	<p style="text-align: right;">Page 125</p> <p>1 SINGER - HIGHLY CONFIDENTIAL</p> <p>2 Q. We spoke a little bit earlier</p> <p>3 about non-defendant dealer banks that might</p> <p>4 be in the class.</p> <p>5 That would be one of the</p> <p>6 exceptions that you are thinking about; is</p> <p>7 that fair?</p> <p>8 A. I think that -- well, let me</p> <p>9 just say something, that both non-defendant</p> <p>10 banks and banks are sometimes liquidity</p> <p>11 takers, if that's what you are asking me.</p> <p>12 Q. My question is just a little</p> <p>13 bit different, although we will come to</p> <p>14 that in a moment.</p> <p>15 But it's possible that a</p> <p>16 non-defendant bank provided liquidity such</p> <p>17 that it is a price maker in a certain</p> <p>18 context?</p> <p>19 A. Non-defendant banks sometimes</p> <p>20 provide liquidity, yes, yes.</p> <p>21 Q. Hedge funds sometimes provide</p> <p>22 liquidity; is that right?</p> <p>23 MR. NOSS: Objection to form.</p> <p>24 Q. Let me rephrase the question.</p> <p>25 Do you have any understanding</p>